ROTEL®

Owner's Manual

RA-1060

Stereo Integrated Amplifier

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR THE USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT. INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU AU FOND.

This symbol is to alert the user to the presence of uninsulated dangerous voltages inside the product's enclosure that may constitute a risk of electric shock.

This symbol is to alert the user to important operating and maintenance (service) instructions in this manual and literature accompanying the product.

CE

Cautions

WARNING: There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose the unit to moisture or water. Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions.

Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions.

Clean the enclosure only with a dry cloth or a vacuum cleaner.

You must allow 10 cm or 4 inches of unobstructed clearance around the unit. Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation openings. If the unit is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling.

Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.

The unit must be connected to a power supply only of the type and voltage specified on the rear panel. (USA: 115 V/60Hz, EC: 230V/50Hz)

Connect the component to the power outlet only with the supplied power supply cable or an exact equivalent. Do not modify the supplied cable. Do not defeat grounding and/or polarization provisions. The cable should be connected to a 2-pin polarized wall outlet, matching the wide blade of the plug to the wide slot of the receptacle. Do not use extension cords.

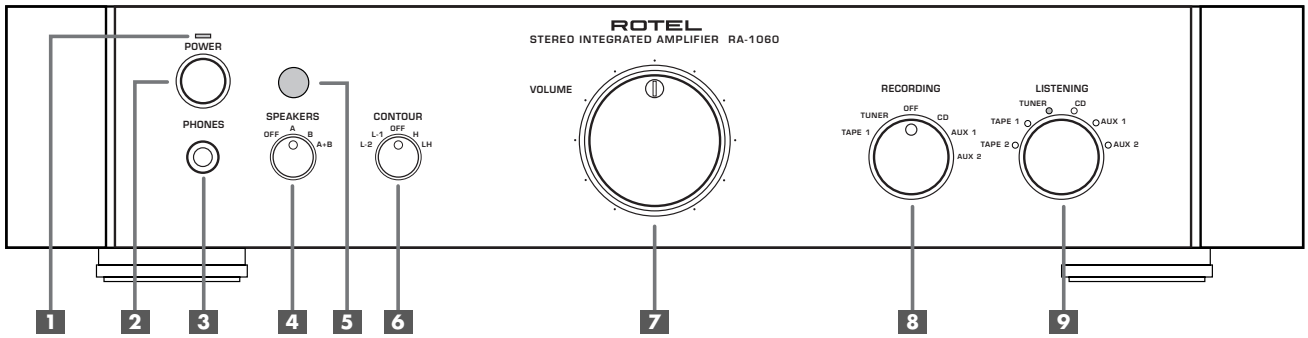
Do not route the power cord where it will be crushed, pinched, bent, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit.

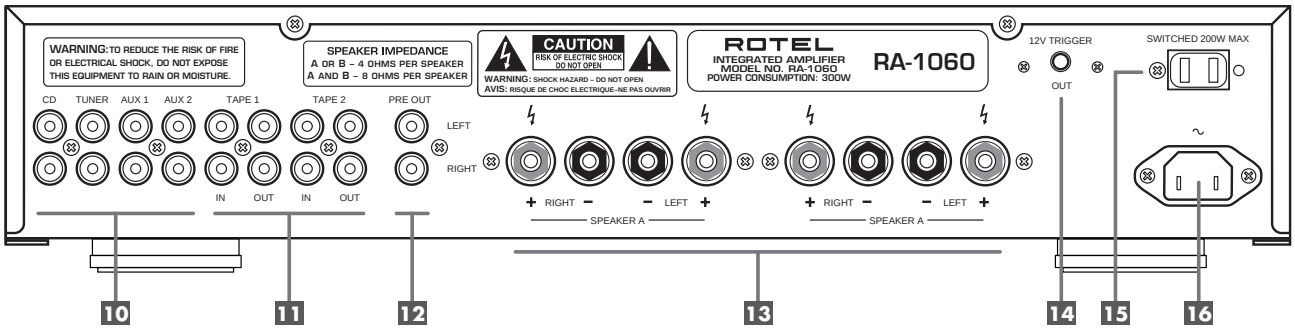
The power cord should be unplugged from the wall outlet if the unit is to be left unused for a long period of time.

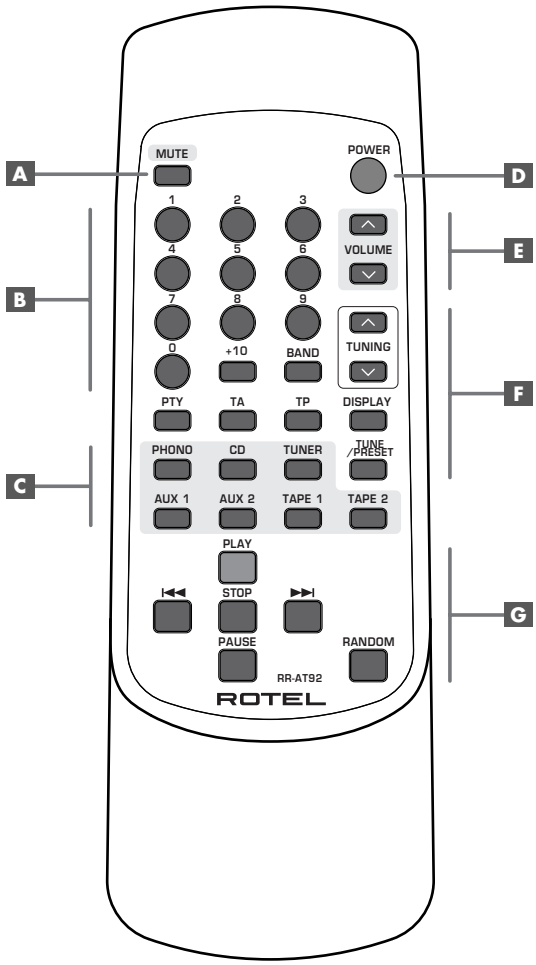
Immediately stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation
- The unit has been dropped or damaged in any way

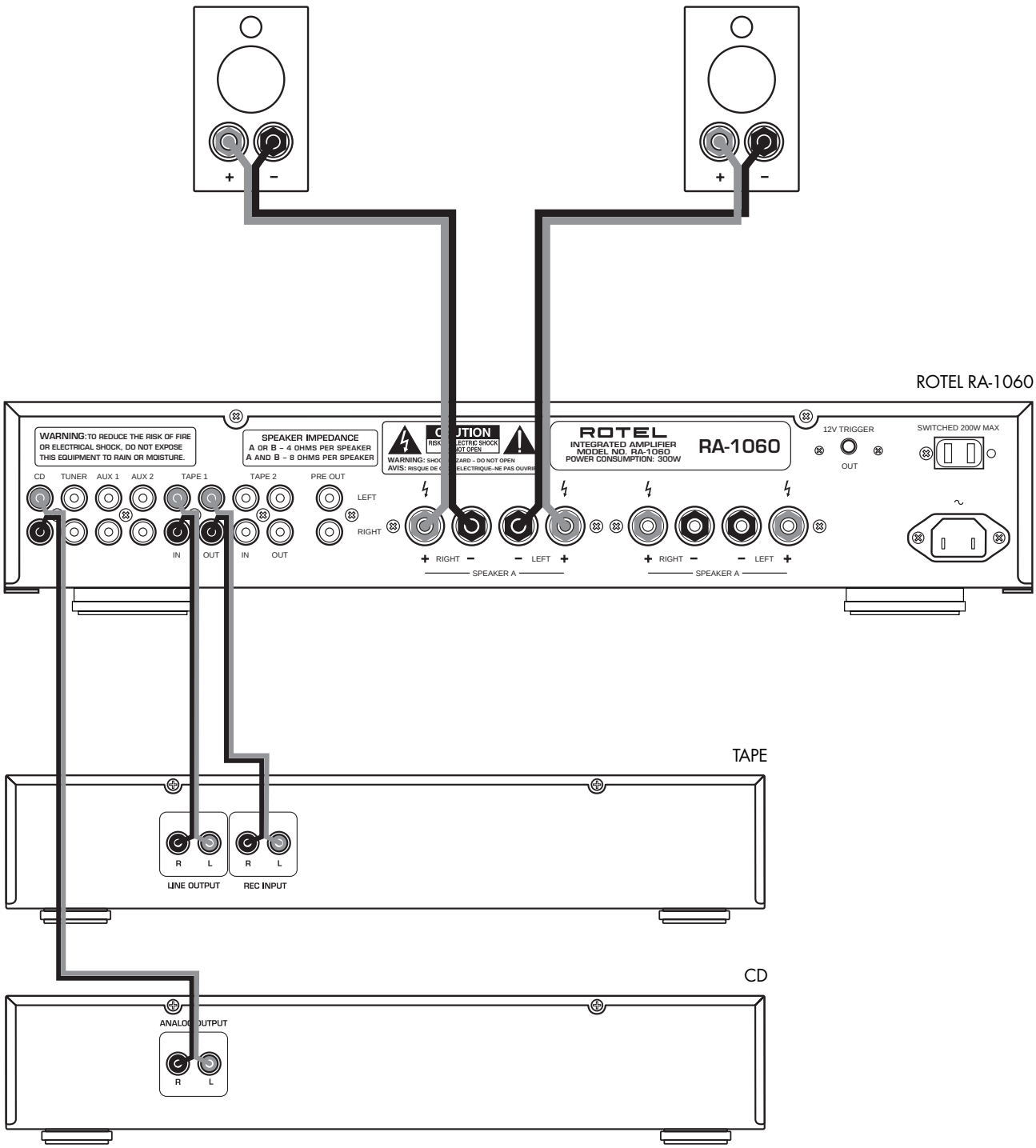
1: Controls and Connections







2: Connections



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About Rotel

A family whose passionate interest in music led them to manufacture high fidelity components of uncompromising quality founded Rotel 40 years ago. Through the years that passion has remained undiminished and the family goal of providing exceptional value for audiophiles and music lovers regardless of their budget, is shared by all Rotel employees.

The engineers work as a close team, listening to, and fine tuning each new product until it reaches their exacting musical standards. They are free to choose components from around the world in order to make that product the best they can. You are likely to find capacitors from the United Kingdom and Germany, semi conductors from Japan or the United States, while toroidal power transformers are manufactured in Rotel's own factory.

Rotel's reputation for excellence has been earned through hundreds of good reviews and awards from the most respected reviewers in the industry, who listen to music every day. Their comments keep the company true to its goal - the pursuit of equipment that is musical, reliable and affordable.

All of us at Rotel, thank you for buying this product and hope it will bring you many years of enjoyment.

Getting Started

Thank you for purchasing the Rotel RA-1060 Stereo Integrated Amplifier. When used in a high-quality music audio system, it will provide years of musical enjoyment.

The RA-1060 is a full featured, high performance component. All aspects of the design have been optimized to retain the full dynamic range and subtle nuances of your music. The RA-1060 has a highly regulated power supply incorporating a Rotel custom-designed toroidal power transformer and custom-made slit foil capacitors. This low impedance power supply has ample power reserves, which enables the RA-1060 to easily reproduce the most demanding audio signals. This type of design is more expensive to manufacture, but it is better for the music.

The printed circuit boards are designed with Symmetrical Circuit Traces. This insures that the precise timing of the music is maintained and faithfully recreated. The RA-1060 circuitry uses metal film resistors and polystyrene or polypropylene capacitors in important signal paths. All aspects of this design have been examined to ensure the most faithful music reproduction.

In addition the RA-1060 has independent input signal selectors for listening and recording. They allow you to listen to one signal source while recording another.

The main functions of the RA-1060 are easy to install and use. If you have experience with other stereo systems, you shouldn't find anything perplexing. Simply plug in the associated components and enjoy.

Unpacking

Carefully remove the RA-1060, the remote control, and accessories from the shipping carton. Save the shipping carton and all enclosed packing material for future use. Shipping or moving the unit in anything other than the original packing material may result in severe damage.

Keep the original sales receipt. It is your best record of the date of purchase, which you will need in the event warranty service is ever required.

Placement

Like all audio components that handle low-level signals, the RA-1060 can be affected by its environment. Avoid placing the RA-1060 on top of other components. Also avoid routing audio signal cables near power cords. This will minimize the chance it will pick up hum or interference.

The RA-1060 generates heat as part of its normal operation. The heat sinks and ventilation openings in the amplifier are designed to dissipate this heat. The ventilation slots in the top cover must be open. There should be 10 cm (4 inches) of clearance around the chassis, and reasonable airflow through the installation location, to prevent the amplifier from overheating.

Remember the weight of the amplifier when you select an installation location. Make sure that the shelf or cabinet can support it. We recommend installing the RA-1060 in furniture designed to house audio components. Such furniture is designed to reduce or suppress vibration which can adversely affect sound quality. Ask your authorized Rotel dealer for advice about component furniture and proper installation of audio components.

The RA-1060 is supplied with an RR-AT92 remote control and must be placed where the infrared signal from the remote can reach the front panel Remote Sensor.

Cables

Keep power cords, digital cables, and audio cables away from each other. This will minimize the chance of the audio signal cables picking up noise or interference from the power cords or digital cables. Using high quality, shielded cables will also help to prevent noise or interference. If you have any questions see your authorized Rotel dealer for advice about the best cable to use with your system.

Remote Control

The RA-1060 includes an RR-AT92 remote control that operates many of the controls of the RA-1060. In addition, the remote operates basic features of some Rotel CD players, DVD players, and AM/FM tuners.

Audio Controls A C D E

The RR-AT92 duplicates the basic audio functions of the RA-1060 front panel. When a function is available on both the front panel and the remote, a number (see front panel illustration) and a letter (see remote control illustration) are shown in the instructions. For example, to change the volume level, you can either turn the control 7 on the front panel or use the buttons E on the remote. When only one identifier appears, that control is available only on the front panel or the remote, but not both.

CD Functions B G

The PLAY, STOP, PAUSE, TRACK +/–, RANDOM buttons, and NUMERIC keys (0-10) operate many Rotel CD players after the CD button on the remote has been pressed.

DVD Functions G

The PLAY, STOP, PAUSE, and TRACK +/–, buttons operate Rotel DVD players, after the AUX1 button on the remote has been pressed.

Tuner Functions B F

The BAND, TUNING, and additional tuning feature buttons operate Rotel tuners, after the TUNER button on the remote has been pressed.

By default, the RR-AT92 operates the Rotel RT-955 tuner. Alternatively, the remote can be reprogrammed to operate the RT-940AX tuner. This programming only needs to be done once:

To program for the RT-940AX: press the POWER button and the 2 button simultaneously.

To program for the RT-955: press the POWER button and the 1 button simultaneously.

Remote Sensor 5

The remote sensor receives infrared signals from the remote control. Do not cover or block the sensor. It must be unobstructed or the remote control will not work properly.

The operation of the remote sensor can also be affected if it is exposed to bright sunlight or certain types of lighting (such as halogen lights) that emit infrared light. In addition remote control functions may not work reliably if the batteries in the RR-AT92 are weak.

NOTE: *To use the remote, aim it at the remote sensor on the front panel of the RA-1060.*

Remote Control Batteries

Two UM-4/AAA size batteries (supplied) must be installed before the remote control can be used. To install the batteries, remove the cover on the back of the RR-AT92. Install the batteries as shown in the illustration in the battery well. Test the control for proper operation, then replace the cover. When the batteries become weak the remote control won't operate the RA-1060 consistently. Installing fresh batteries should eliminate the problem.

NOTE: *Remove the batteries from the remote if it will not be used for a long period of time. Do not leave run down batteries in the remote control; they can leak corrosive chemicals which will damage the unit.*

Speaker Outputs

See Figure 2

The RA-1060 has two sets of speaker outputs, labeled SPEAKER A and SPEAKER B. The speaker outputs are controlled by the switch on the front panel.

Speaker Impedance

If only one set of speakers will be used at any given time, the speakers may have an impedance as low as 4 ohms. If there are times when both the A and B speakers will be used, all the speakers should have an impedance of 8 ohms or more. Speaker impedance ratings are less than precise. In practice, very few loudspeakers will present any problems for the RA-1060. See your authorized Rotel dealer if you have any questions.

Speaker Wire

Use insulated two-conductor stranded wire to connect the RA-1060 to the speakers. The size and quality of the wire can have an audible effect on the performance of the system. Standard speaker wire will work, but can result in lower output or diminished bass response, particularly over longer distances. In general, heavier wire will improve the sound. For best performance, you may want to consider special high-quality speaker cables. Your authorized Rotel dealer can help in the selection of cables for your system.

Polarity and Phasing

The polarity – the positive/negative orientation of the connections – for every speaker and amplifier connection must be consistent so all the speakers will be in phase. If the polarity of one connection is reversed, bass output will be very weak and stereo imaging degraded. All wire is marked so you can identify the two conductors. There may be ribs or a stripe on the insulation of one conductor. The wire may have clear insulation with different color conductors (copper and silver). There may be polarity indications printed on the insulation. Identify the positive and negative conductors and be consistent with every speaker and amplifier connection.

Speaker Connections 13

Turn off all the components in the system before connecting the speakers. The RA-1060 has color-coded speaker connectors on the back panel. These connectors accept bare wire, or connector lugs. (In non-EC markets, the connectors also accept dual banana plugs.)

Route the wire from the RA-1060 to the speakers. Give yourself enough slack so you can move the components to allow access to the speaker connectors. If you are using dual banana plugs, connect them to the wires and then plug into the backs of the binding posts. The thumbscrews of the binding posts should be screwed in all the way (clockwise).

If you are using terminal lugs, connect them to the wires. If you are attaching bare wires directly to the binding posts, separate the wire conductors and strip the insulation from the end of each conductor. Be careful not to cut into the wire strands. Unscrew (turn counterclockwise) the binding post thumbscrews. Place the connector lug or wire around the binding post shaft. Turn the thumbscrews clockwise to clamp the connector lug or wire firmly in place.

NOTE: *Be sure there are no loose wire strands that could touch adjacent wires or connectors.*

Signal Connections

The RA-1060 has line level inputs for source components, connections for audio tape decks, and preamp output connections to send signals to an external power amplifier.

NOTE: *To prevent loud, potentially damaging, noises, make sure the system is turned off when you make any signal connections.*

Line Level Inputs 10

See Figure 2

The RA-1060 has four pair of conventional RCA input connectors for line level components such as CD players, video cassette recorders, tuners, Laser Disc players, or DVD players. These inputs are labeled CD, TUNER, AUX 1, and AUX 2.

The left and right channels are clearly labeled and should be connected to the corresponding channels of the source component. The left RCA connectors are white, the right connectors are red. Use high quality RCA cables for connecting input source components to the RA-1060. Ask your authorized Rotel dealer for advice about cables.

Recorder Connections 11

See Figure 2

Tape inputs and outputs can be connected to any record/playback device that accepts standard line level analog input and output signals. Typically that will be a conventional tape recorder. There are two sets of tape connections on the back panel, labelled TAPE 1 and TAPE 2.

When connecting a recorder to the RA-1060, the **outputs** of the recorder must be connected to the tape **inputs** of the RA-1060. Similarly the tape **outputs** of the RA-1060 must be connected to the **inputs** of the recorder. Be sure to connect the left and right channels of each device to the proper channels on the associated components. Use high quality connecting cables to prevent loss of sound quality.

NOTE: *The tape inputs can also be used for standard playback-only source components, omitting the output connections.*

Preamp Outputs 12

The RA-1060 has a pair of preamp outputs that can send a variable gain signal to an external power amp or signal processor. The preamp outputs are standard RCA-type output connectors, compatible with the inputs of most power amplifiers. Use high quality cables and be sure to connect the left and right channel outputs of the RA-1060 to the correct channels of the amplifier.

AC Power and Control

AC Power Input 16

Because of its relatively high power rating, the RA-1060 can draw considerable current. Therefore, it should be plugged directly into a 2-pin polarized wall outlet. Do not use an extension cord. A heavy duty multi-tap power outlet strip may be used if it (and the wall outlet) is rated to handle the current demanded by the RA-1060 and all the other components connected to it.

Your RA-1060 is configured at the factory for the proper AC line voltage in the country where you purchased it (USA: 115 volts/60Hz AC or CE: 230 volts/50 Hz AC). The AC line configuration is noted on a decal on the back panel. Plug the supplied cord into the AC INPUT receptacle on the back of the unit.

NOTE: *Should you move your RA-1060 to another country, it is possible to reconfigure your amplifier for use on a different line voltage. Do not attempt to perform this conversion yourself. Opening the enclosure of the RA-1060 exposes you to dangerous voltages. Consult a qualified service person or the Rotel factory service department for information.*

If you are going to be away from home for an extended period of time such as a month-long vacation, it is a sensible precaution to unplug your audio and video components while you are away.

POWER Button 2 D
Power Indicator 1

Press the front panel POWER button, to turn the RA-1060 on. The power indicator light is illuminated when the RA-1060 is on. Press POWER button again to turn the RA-1060 off.

Once the RA-1060 has been turned on with the front panel button, it can be switched between normal operating mode and standby mode with the POWER button on the RR-AT92 remote control.

Auxiliary Power Outlet 15 (North American version)

The RA-1060 has a switched outlet on the back panel. Power is available from this outlet when the RA-1060 is turned on. This outlet can provide up to 200 watts and is appropriate for supplying power to signal sources, such as CD players, tuners, or tape decks. It should not be used for power amplifiers. Connecting components that will draw more than 200 watts to these outputs could damage the RA-1060.

NOTE: *Do not connect a power amplifier to the auxiliary power outlet on the RA-1060. Power amplifiers often draw more power than this outlet can provide.*

12V TRIGGER Connection 14

Several Rotel amplifiers can be turned on and off using a 12 volt signal, provided by the 12V TRIGGER connection. When the RA-1060 is activated, a 12 volt DC signal appears at this connector and will turn on an amplifier. When the RA-1060 is turned off, the trigger signal is interrupted and the external amplifier will be turned off.

Audio Controls

The following controls are used to operate the RA-1060.

VOLUME Control 7 E

Turn the front panel VOLUME control clockwise to increase the volume, or counterclockwise to decrease the volume. Alternatively, press the VOL buttons on the remote control to adjust the volume up or down

CONTOUR Selector 6

Instead of conventional tone controls, the RA-1060 has a front-panel CONTOUR control which selects one of five available settings. Each setting provides a fixed frequency contour as follows:

OFF: the tone contour circuits are bypassed to ensure the purest possible sound.

L-1: moderate increase in bass frequencies (typically +3dB @ 100Hz).

L-2: more increase in bass frequencies (typically +4dB @ 100Hz).

H: moderate increase in high frequencies (+3dB @ 10kHz).

LH: combination of L-2 bass and H high frequency increases.

LISTENING Selector 9 C

The setting of the LISTENING selector controls which of the input signals goes to the main outputs and onto the power amplifier – or, more simply, which source is heard. Turn the front panel control to the source you want to hear, or press the corresponding button on the RR-AT92 remote.

RECORDING Selector 8

The RA-1060 can record from any input source (except TAPE 2) to a recorder connected to TAPE 1 or TAPE 2 outputs. To select an input source for recording, turn the RECORDING control on the front-panel to the desired source.

This selection is independent of the source selected for listening. While recording, you may still select a different source using the LISTENING selector.

If you have a three-head recorder or a DAT recorder that allows simultaneous read and write operation, you can monitor your recording by setting the LISTENING switch to the TAPE 1 or TAPE 2 position.

NOTE: *If you select TAPE 1 with the RECORDING control, the recording signal will only be available at the TAPE 2 recording outputs, not the TAPE 1 outputs. To dub a tape, select TAPE 1 and record to the tape deck connected to the TAPE 2 outputs.*

MUTE Button A

To temporarily mute the sound of the system press the MUTE button on the RR-AT92 remote. Press the button again to return the sound volume to the original level. The LED in the volume control will flash when the unit is muted.

PHONES Output 3

The PHONES output allows you to connect headphones for private listening. This output accepts standard stereo phone (1/4") plugs. If your headphones have another type of plug, such as a 1/8" mini-plug, you will need an adapter plug. Contact your authorized Rotel dealer, to get the correct adapter plug.

NOTE: *Plugging in headphones does not cut off the signal to the speakers. If desired, use the SPEAKERS selector to turn off the signal to the speakers for private listening.*

SPEAKERS Selector 4

A four-position rotary switch on the front panel determines which set of speakers, if any, is active. Set the SPEAKER selector as follows:

OFF: No speakers will be heard. Use this position when listening to headphones.

A: The speakers connected to the SPEAKER A terminals will be heard.

B: The speakers connected to the SPEAKER B terminals will be heard.

A+B: The speakers connected to both the SPEAKER A and SPEAKER B terminals will be heard.

Protection Circuit

A thermal protection circuit protects the amplifier against potential damage in the event of extreme or faulty operating conditions. Unlike many designs, the RA-1060's protection circuit is independent of the audio signal and has no impact on sonic performance. Instead, the protection circuit monitors the temperature of the output devices and shuts down the amplifier if temperatures exceed safe limits.

Should a faulty condition arise, the amplifier will stop playing. If this happens, turn the amplifier off, let it cool down for several minutes, and attempt to identify and correct the problem. When you turn the amplifier back on, the protection circuit will automatically reset.

Troubleshooting

Most difficulties in audio systems are the result of incorrect connections, or improper control settings. If you encounter problems, isolate the area of the difficulty, check the control settings, determine the cause of the fault and make the necessary changes. If you are unable to get sound from the RA-1060 refer to the suggestions for the following conditions:

Power Indicator Is Not Lit

The power indicator should be lit whenever the RA-1060 is plugged into the wall power outlet and the POWER switch is pushed in. If it does not light, test the power outlet with another electrical device, such as a lamp. Be sure the power outlet being used is not controlled by a switch that has been turned off.

Fuse Replacement

If another electrical device works when plugged into the power outlet, but the power indicator still will not light when the RA-1060 is plugged into the wall outlet, it indicates that the internal power fuse may have blown. If you believe this has happened, contact your authorized Rotel dealer to get the fuse replaced.

No Sound

Check the signal source to see if it is functioning properly. Make sure the cables from the signal source to the RA-1060 inputs are connected properly. Be sure the LISTENING selector is set to the proper input. Be sure the SPEAKERS selector is set to the proper position. Check the wiring between the RA-1060 and the speakers.

Specifications

Continuous Power Output
60 watts/channel (20-20 kHz, < 0.03%, 8 ohms)

Total Harmonic Distortion (20Hz-20kHz)
< 0.03% at rated power, 1/2 power, or 1 watt

Intermodulation Distortion
(60 Hz : 7 kHz, 4:1)
< 0.03% at rated power, 1/2 power or 1 watt

Frequency Response (all inputs)
10Hz-100kHz, +1, –3dB

Damping Factor (20-20,000 Hz, 8 ohms)
150

Input Sensitivity / Impedance
160 mV / 33 kOhms

Input Overload
5 V

Preamplifier Output / Impedance
1V / 470 ohms

Signal to Noise Ratio (IHF "A" weighted)
>95 dB

Power Requirements
USA: 115 Volts, 60 Hz
EC: 230 Volts, 50 Hz

Power Consumption
300 Watts

Dimensions (W x H x D)
430 x 92 x 355 mm
17 x 5 5/8 x 14 inches

Weight (net)
7.8 kg, 17.2 lbs.

All specifications are accurate at the time of printing.

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